Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V DRAFT NO. V-02-020
AK STEEL CORPORATION
Ashland, KY
JUNE 6, 2002
BRIAN SMITH, REVIEWER
PLANT I.D. # 21-019-00005
APPLICATION LOG # 50109

SOURCE DESCRIPTION:

AK Steel operates a steel mill in Ashland, Kentucky. A Title V application was received by the Division on December 13, 1996. The application was called complete on February 14, 1997. AK Steel has since proposed a production increase of sufficient magnitude to trigger PSD (401 KAR 51:017, "Prevention of Significant Deterioration of Air Quality"). They are netting out of PSD by using emission credits obtained from significant emissions decreases over the past ten years. Using the available credits, AK Steel will net out of PSD.

COMMENTS:

AK Steel has the following emission points at their Ashland facility:

EP 47 &48 - Amanda Blast Furnace North and East Cast Houses
Type of Control: flame suppression system
Applicable Regulations: 401 KAR 61:170, "Existing blast furnace casthouses"
Construction Date: 1963

EP 03 - Amanda Blast Furnace Stoves
There are three stoves: two heating and one blasting.
Primary fuel: blast furnace gas (secondary fuel is natural gas)
Type of Control: none
Applicable Regulations: 401 KAR 61:020, "Existing process operations"
401 KAR 61:035, "Existing process gas streams"
Construction Date: 1963

EP 04 - Amanda Flare
The flare is used to combust excess blast furnace gas.
Type of Control: none
Applicable Regulations: 401 KAR 61:035, "Existing process gas streams"
401 KAR 63:015, "Flares"
Construction Date: 1963

EP 33 - Amanda Bleeders

The bleeders act as pressure relief valves in the event of process upset.
Type of Control: none
Applicable Regulations: none
Construction Date: 1963

EP 50 - Amanda Blast Furnace Slag Pit

The slag pit is the area where slag accumulates after it is tapped out of the blast furnace.
Type of Control: none
Applicable Regulations: 401 KAR 63:010, "Fugitive emissions"
Construction Date: 1963

EP 26 - Amanda Blast Furnace Coal Injection

This process consists of two parts: coal drying and coal injection. Natural gas is used for coal drying.
Type of Control: four baghouses
Applicable Regulations: 401 KAR 61:020, "Existing process operations"
Construction Date: 1973

EP 86 &87 - B.O. Shop Oxygen Blowing

There are two vessels that require oxygen blowing to refine molten metal to steel.
Type of Control: venturi scrubber, flare (to combust carbon monoxide emissions)
Applicable Regulations: 401 KAR 61:080, "Steel plants using existing basic oxygen process furnaces"
Construction Date: 1963

EP 88 - B.O. Shop Fugitives

This point includes emissions resulting from charging, tapping, desulfurizing, hot metal transfer, slag skimming, and lime handling.
Type of Control: baghouse
Applicable Regulations: 401 KAR 61:080, "Steel plants using existing basic oxygen process furnaces"
Construction Date: 1963

EP 85 - B.O. Shop Roof Monitor

This point includes emissions that are not captured by the venturi scrubbers during the oxygen blowing period in addition to the fugitives that were not captured by the fugitive's baghouse.
Type of Control: none
Applicable Regulation: 401 KAR 61:080, "Steel plants using existing basic oxygen process furnaces"
Construction Date: 1963

EP 51 - B.O. Shop Slag Processing Area

This is a large pit where slag gets dumped.
Type of Control: none
Applicable Regulations: 401 KAR 63:010, "Fugitive emissions"
Construction Date: 1963

EP 38 - Ladle Refiner

This is a steel purification process.
Type of Control: baghouse
Applicable Regulations: 401 KAR 59:010, "New process operations"
Construction Date: 1983

EP 89 - Continuous Slab Caster

The slab caster is made up of three machine points: the tundish station, combustion of natural gas to keep the tundish hot, and the torch cutting process.
Type of Control: building capture
Applicable Regulations: 401 KAR 59:010, "New process operations"
Construction Date: 1990

EP 90 - Emergency Argon Stirring

This process is a backup to the ladle refiner.
Type of Control: none
Applicable Regulations: 401 KAR 59:010, "New process operations"
Construction Date: 1992

EP 52, 53, 54, & 55 - Boilers No. 5, 6, 7, and 13

Primary fuels are blast furnace gas. Secondary fuels are natural gas and No. 6 fuel oil.
Type of Control: none
Applicable Regulations: 401 KAR 59:015, "New indirect heat exchangers"
401 KAR 61:015, "Existing indirect heat exchangers"
Construction Date: 1962 (Boilers 5, 6, &7), 1978 (Boiler 13)

EP 56 - 170.5 MMBTU/hr Package Boiler

Primary fuel is natural gas. Secondary fuel is No. 6 fuel oil.
Type of control: none
Applicable Regulations: 401 KAR 59:015, "New indirect heat exchangers"
Construction Date: 1997

EP 102, 103, 104, 105, 106, & 107 - Ladle Preheaters

These heaters burn natural gas and are used to heat the ladles before molten metal is poured into them.
Type of Control: none
Applicable Regulations: none
Construction Date: 1968

EP 100 & 101 - No. 3 Coating Line Direct Fire Heater and Radiant Tube Heater

Both heaters are continuous strip annealing furnaces.
Type of Control: none
Applicable Regulations: 401 KAR 61:020, "Existing process operations"
Construction Date: 1968

EP 108 - Roads and Parking Lots

Emissions here are fugitive emissions from all of AK Steel's roads and parking lots.
Type of Control: none
Applicable Regulations: 401 KAR 63:010, "Fugitive emissions"
Construction Date: 1920's

EP 109 & 110 - Unloading Raw Materials and Stockpiles

Both points are responsible for generating fugitive emissions.
Type of Control: none
Applicable Regulations: 401 KAR 63:010, "Fugitive emissions"
Construction Date: 1920's

EMISSION AND OPERATING CAPS DESCRIPTION:

AK Steel has proposed the following emission caps to avoid the applicability of PSD requirements:

EP 50 - Slag Pit: Particulate and PM10 emissions shall not exceed 15.4 lbs/hr and 67.3 tons/yr.
EP 26 - Coal Injection: Particulate and PM10 emissions shall not exceed 1.93 lbs/hr and 8.4 tons/yr.
EP 85 - B.O. Shop Roof Monitor: Particulate emissions shall not exceed 54.4 lbs/hr and 238.4 tons/yr. PM10 emissions shall not exceed 36.5 lbs/hr and 159.8 tons/yr.
EP 51 - Slag Processing: Particulate and PM10 emissions shall not exceed 10.1 lbs/hr and 44.1 tons/yr.
EP 38 - Ladle Refiner: Particulate and PM10 emissions shall not exceed 3.8 lbs/hr and 16.6 tons/yr.
EP 89 - Tundish Station: Particulate and PM10 emissions shall not exceed 4.34 lbs/hr and 23.8 tons/yr.
EP 89 - Torch Cutter: Particulate and PM10 emissions shall not exceed 0.468 lbs/hr and 2.05 tons/yr.
EP 90 - Argon Stirring: Particulate and PM10 emissions shall not exceed 0.555 lbs/hr and 2.43 tons/yr.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.